

cells, 4,540,000; white cells, 14,300; hemoglobin, 65%; color-index, 72. Urine: Alkaline, cloudy, much pus, no sugar; albumen, urea 13.5. Cryoscopy, June 18th, —0.83; June 23d, —0.86; July 5th, —1.02; July 9th, —1.06; July 15th, urea, .0085. Cryoscopy, July 19th, —1.04; July 29th, —1.14. Wound healed, good condition.

August 10th—Many pus cells, granular casts (2), round epithelia.

Cryoscopy, September 29th, —1.08; January 5th, —0.85; February 23d, —1.06.

Case 3.—M. R., 70 years. Patient when first seen (December 6, 1904) by attending physicians was complaining of dyspnea, edema of lower extremities and ascites; enlarged liver; gastro-intestinal disturbances. Little urine, which contained albumen (600-800 cc. per day). Heart enlarged; murmurs at mitral and pulmonary areas.

As the patient complained of great difficulty in urinating, he was catheterized and a large quantity (about 1 quart) withdrawn. Catheterization was difficult, and in about 2 weeks urine contained large amount of pus, which increased, although the bladder was washed daily. Temperature ran a septic course, and the patient was in a more or less comatose condition. Pain on palpation over left kidney. As infection of left kidney was suspected, the following examination was made:

December 31st, both ureters catheterized.

Cryoscopy, right, —0.73. Left, —0.76.
Sugar—No sugar $\frac{1}{2}$ and 1 hour after injection XXV minims $\frac{1}{2}$ % phloridzin.

Urea, .011. Albumen, .55%.
Microscopic—Numerous pus cells, uric acid crystals, epithelial cells, 2 granular casts. Urea, .011. Albumen, .5%.
Microscopic—Numerous pus cells, uric acid crystals, epithelial cells; 1 granular and 2 pus casts.

In this case operative interference was not indicated as the findings showed a parenchymatous nephritis on both sides.

Case 4.—Dr. Eaton's case. Mrs. X., 58 years old. Father and mother died of old age. Has 6 children, the youngest being 18 years. Previous history, menopause 5 years ago. Has suffered from chronic constipation for years.

Present trouble began 5 years ago, when she noticed some trouble in urinating and occasional shooting pains from the lower border of thorax to the pubes on the left side. At times the urine was very cloudy.

Status, November 21, 1904.—Lungs normal with exception of slight accentuation of breath sounds at right apex. Heart and vessels normal.

Urine, 1,600 cc.; cloudy; acid; sp. gr. 1.030; albumen, 1-20%. Microscopic, flat and caudate epithelium, uric acid crystals, numerous pus-cells, no casts. Tubercle bacilli.

November 24th—Cystoscopic at examination showed a contracted bladder, left ureteral opening pointing. Right ureter catheterized; clear urine by bladder; catheterized urine showed much pus and tubercle bacilli.

November 30th—Left ureter catheterized.
Cryoscopy, right, —1.1. Left, —0.4.
Sugar, 0.4%. Sugar, 0%.
Urea, .0055. Urea, .001.

Microscopic—Few red cells, Numerous pus-cells. leukocytes.

December 5th, Dr. Eaton removed small kidney. December 7th, 35 ounces urine; patient doing well. December 17th, cryoscopy, —0.98.

Many more observations could be cited substantiating the statements made at the beginning of the paper, if time permitted. In conclusion, we again wish to emphasize that in every case of pyuria cystoscopy and inspection of the ureteral openings should be done. If infection of the upper urinary tract is suspected, the ureters should be catheterized and the separate urines subjected to the tests given above. If this is done we are sure that the results in kidney surgery will be more satisfactory than in the past.

DISCUSSION.

Dr. Chas. D. Lockwood, Los Angeles: I would not minimize the value of the catheterizing cystoscope, and I wish to compliment the essayist highly for his painstaking work—but I wish to say that the different forms of segregators now in use are of great value in estimating the functional activity of one or both kidneys. An absolutely correct diagnosis in many cases is possible only after catheterization of the uterus; but in many cases the segregator is equally as accurate, and in some cases where catheterization is impossible, segregation is practicable. If the observation cystoscope is employed before segregation is begun, the bladder as a source of error can be eliminated, and the findings of the segregator relied upon. Harris in this country, and Luys in France, have furnished indubitable evidence in over 200 cases of the accuracy of their methods. I myself have used the segregator in about 50 cases, most of which were followed by operation or postmortem ex-

amination, and in the large majority the findings were eminently satisfactory.

I wish also to speak of phloridzin, in this connection, as an index to functional activity. I have employed this agent now in 12 cases, and the results have been so uniform that my confidence has grown with each test.

Tetanus.

J. M. Anders and A. C. Morgan, Philadelphia (*Journal A. M. A.*, July 29th), give a preliminary report of their statistical study of 1,201 cases of tetanus, collected from the literature and by direct correspondence, with special reference to the incidence of the disease in the United States. They find convincing proof that tetanus is invariably the result of the introduction of the germ, and that the so-called rheumatic or idiopathic tetanus does not exist. They also find that it is endemic in all large centers of population, that in some localities where it was formerly common, notably in Long Island, it has become rare, and that occasional small epidemics, traceable to a definite source, occur in limited localities, as, for instance, in hospitals, etc. It appears also that tetanus is more prevalent in the hotter part of the year, that males are more subject to it than females, and that it is less frequent in advanced age. The robust are more susceptible than the weak, and the nervous than the lymphatic. There is much evidence that the disease is transmissible and may give rise to epidemics. The germ, Nicolaier's bacillus, is rarely introduced by the alimentary tracts, but usually through open wounds, all parts of the body being very susceptible. A number of interesting clinical features observed in the cases collected are related, and it was noticed that the characteristic symptoms, especially trismus, were generally present. The diagnostic importance of the tonic contractions as opposed to the intermittent ones in certain other conditions that simulate tetanus, such as strychnia poisoning, is emphasized. The authors found that their studies supported the earlier ones as regards the mortality, which decreases gradually after the tenth day and rapidly after the fifteenth. The study showed clearly the value of immediate radical local treatment, and that the most important thing is to open the wound freely in all directions under general anesthesia. Many patients were more or less benefited by the local carbolic acid treatment, and some observers report good results from the local use of ice or freezing mixtures or treatment in a cold room. For palliative treatment, chloral and the bromids appear to have been most extensively used. Calabar bean has been much employed, and also morphin, which should be used with caution on account of its inhibitory action on the respiratory centers. There is no question as to the value of antitoxin as a prophylactic, the testimony is uniformly in its favor. It should be used in any case in which there is suspicion of tetanus infection. In a well-developed case of the disease it has no appreciable beneficial effect, neither reducing the mortality nor hastening recovery.

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